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## Exploring the Wonders of Gaharu

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**Abstract:** Gaharu (agar wood, aloeswood, eaglewood, jinkoh, chen-xiang and aquilaria) have always been known as a highly valuable and one of the most expensive woods in the world. As one of the threatened plants in the world there is a dire need to preserve it due to its usefulness. This paper will explore the uses of gaharu especially from the Islamic perspective and its potential use in our daily life. Gaharu or 'Oud' as it is known in Arab countries is widely use in Islamic healing methods since the time of the Prophet Muhammad SAW. Other than medical and health products, this wonderful resource can be found in the production of food and drinks, aromatherapy, beauty and decorative items. In view of its long tradition of importance in the life of a Muslim, relevant authorities in the Muslim world should play their part in preserving this endangered resource.

**Keywords:** Gaharu, Uses, Traditional Islamic Medicine

### 1. Introduction

Gaharu or Oud is well known in the Middle East it be be one of the most expensive plants in the world (Gerard, 2007; Persoon, 2008). It has been widely used in traditional Islamic healing practices. It is also valued in many cultures for its distinctive fragrance, and used extensively in incense and perfumes (Chen et al., 2011; Kakino et al., 2010). Gaharu is the occasional product of genera in the family Thymelaeaceae, i.e: *Aquilaria agallocha*, *Aquilaria crassna* and *Aquilaria malaccensis* being the three best known species. The name of the species is derived from the latin word "aquila" meaning eagle (Chakrabarty et al., 1994; Okudera, & Ito, 2009). Gaharu is known and has been traded for thousands years in many Asian countries and at least 15 species of *Aquilaria* trees are known to produce the much sought-after agar wood.

Agarwood is popularly used by people for cultural, religious and medicinal purposes. It is known as 'gaharu' in Indonesia and Malaysia, jin-koh' in Japan, 'chen hsiang' or 'chenxiang' in China, 'agar' in India, 'chim-hyung' in Korea, 'kraitsana noi' in Thailand, 'tram huong' in Vietnam, 'bols d'agle', 'bols d'aloës', 'calambac' or 'ca-lambour' in French and 'oud' in the Middle East (Burkill,1935; Ng et al.,1997; Sidiyasa,1986). Burkill (1935), noted the difference between agarwood tree which is known as 'karas' or 'kekaras', while 'gaharu' refers to heavy fragrant wood (Yumi et al., 2016).

Karas tree is a major source of agar wood, a resinous heartwood. The resinous wood is often used as incense, for medicinal purposes, and pure resin in distilled form is used as perfume and perfume component. Agarwood can produce an essential oil, which is extracted from a part of the tree that is dying due to disease, traditionally, resin is produced by the tree in response to infection by a parasitic ascomycetous mould, *Phaeoacremonium parasitica*, a dematiaceous (dark-walled) fungus. (Veronica et al., 2015).

Recently, scientists have found a new formula to get the oil in a relatively easier manner. When an injection is made onto the tree, in a few minutes the Karas tree will expel latex. When the latex later freezes, the process to get the oil is done.

## 2. What is Agarwood?

Agarwood is an aromatic resin produced in the stems of tropical trees within the genera; *Aquilaria*, *Gyrinops*, *Gonystylus*, *Aetoxylon*, & *Wikstroemi* all are under the family of Thymelaeaceae. To date no fewer than 26 tree species yield gaharu. Agarwood is traded under various names (gaharu, agarwood, aloeswood, eaglewood) and is used for incense, perfumes, medicines, aromatherapy and religious ceremonies. Agarwood is highly valued by consumers in Asia and the Middle-East, such as Saudi Arabia, the United Arab Emirates, Hong Kong, Japan & Taiwan for its distinctive fragrance. (Barden et al., 2000; Saad et al., 2015).

The content of essential oil in agarwood pieces affects the quality of fragrance. Factors affecting oil content include place of origin, botanical species, age and section of the tree from which the piece is taken. Agarwood contains 24 phenol compounds each having its own unique properties lending the resulting fragrance a “highly complex accord”. (Yumi et al., 2016).

In Malaysia, there are four common species found in this region. *A. malaccensis*, *A. hirta*, *A. beccariana* and *A. rostrata*. It is confined mainly in both primary and secondary Malaysian lowland and hill dipterocarp forests with daily temperature range of 20-22°C. *Aquilaria malaccensis* is a large evergreen tree growing over 15-30 m tall and 1.5-2.5 m in diameter and has white flowers. It is locally found throughout Peninsular Malaysia, except for the States of Kedah and Perlis (Barden et al., 2000).

## 3. Agarwood Oil Production

Agarwood oil is an oleoresin which forms in response to many biotic and abiotic factors. Gaharu forms when the karas tree gets wounded as a result of lightning strikes, branches or stems that get broken due to strong winds or injury caused by animal attacks. The healthy heartwood itself is odourless when freshly cut, soft, even-grained, and of low density with a yellow-whitish colour. Only under specific conditions, and when a tree has been infected or wounded, the scented agarwood formed. Agarwood oil will naturally be secreted to stop the infection from spreading to other parts of the tree. In Gaharu farm productions, gaharu can be produced through physical and chemical methods. Physical methods involve injuring the branches by striking it with a sharp object, removing its skin or nailing parts of the tree. This will bring about fungus attack and stimulates the production of gaharu by the affected tree. Chemical methods involve biotic and abiotic methods. Biotic technique uses fungal, bacteria or virus that are inoculated into the karas tree. Abiotic technique makes use of chemicals such as enzymes, molasses, or any material that helps the growth of fungal (Afiffudden et al, 2015).

## 4. Uses of Agarwood

Agarwood is widely used in perfume, incense, aromatherapy and medicine across Asia, Middle East, and Europe. In Southeast Asian countries like Bangladesh and Tibet, it commonly used in treatment the joint pain, inflammatory related ailments, and diarrhoea, as well as a stimulant, sedative and cardio protective agent (Chen et, 2011).

Since ancient time, perfumery and aromatherapy industry has been established and many aromatics materials were transported to Saudi Arabia to be used in religious worship. However, agarwood was probably not known during those times unlike today where medicine shops and perfume shops sell a wide range of agarwood related products. Specifically the production of such refined perfumery products has been a part of the local perfumery culture from early on. It appears that the production of mixed products presented a common part of daily cookery until it became its own craft (Saad et al, 2015). Currently, agarwood is used in

perfumery by several means. Sometimes, the wood is chopped into sticks or splinters to be used in incensation without any further processing in order to appreciate the exclusive agarwood fragrance. The simpler variations are wood sticks that have been soaked in perfume oil while more complex incense compositions are based on a wider variety of ingredients, such as agarwood, spices, musk, ambergris, oils, and others. These ingredients are melded together in a syrup in order to produce a cohesive aromatic amalgam. Highly volatile substances are preferably combined with tenacious ones in order to achieve a favourable olfactory harmony over a longer course of time. For all these perfumery products, agarwood serves well as a base, while other aromatics may contribute supplementary properties to the mixture (Hansen, 2000). The uses of agarwood are not only restricted to perfumery and incense. Solid pieces of agarwood are carved into natural art sculptures, decorative ornaments, beads, bracelets and boxes (Barden et al., 2000; Persoon, 2008). In India, agarwood has been used as fuel for fumigation, cloth and rope from agarwood bark. In Taiwan, agarwood is also traded as crude and prepared for medicine based on traditional Chinese medicine.

Besides using in perfumery and sculpture, agarwood also an important traditional medicinal plant used to treat various infectious ailments including inflammatory diseases, anti-diabetic (Feng & Yang., 2011), anti-inflammatory (Zhou et al., 2008), anti-cancer (Dahham et al., 2014), anti-depressant (Okugawa et al., 1993), and anti-oxidant (Yumi et al., 2016). It has also been used by Arabs and Japanese to treat digestive and sedative disorders (Saad et al., 2015). Nevertheless, other materials from the agarwood plant have also found prominent uses in the traditional medicine practices of the Southeast Asian communities, such as Chinese, Tibetan, Unani and Ayurvedic medicines (Barden et al., 2000; Kakino et al., 2010).

## 5. Gaharu in Islamic perspectives

In Islamic medicine, agarwood has been recognized as a minor drug since the early times of *ḥadīth*, as seen in the following example: Narrated Um Qais: that she took to Allah's Apostle one of her sons whose palate and tonsils she had pressed because he had throat trouble. The Prophet said, 'Why do you pain your children by getting the palate pressed like that? Use the Ud Al-Hindi (certain Indian incense) [i.e. agarwood] for it cures seven diseases one of which is pleurisy' (MSA-USC Hadith Database, *Ṣaḥīḥ al-Bukhārī*, Vol. 7, Book 71, No. 613).

Agarwood is also stated as an agreeable scent in the religion of Islam as part of the pursuit of perfumery for centuries. The *ḥadīth* give abundant hints about the existence of a productional craft already at the time of the *ḥadīth*'s origin. Often the *ḥadīth* include citations of perfumery products that were used. They also provide a report on the value of perfumes, for example, as a respectable object to be offered to others, as stated by al-Bukhārī: Anas said: The Prophet used not to reject the gifts of perfume. Prayer practices clearly demonstrate this perfumery aspect in Islam. The reward for perfuming is expressed in the following *ḥadīth*: The Prophet (p.b.u.h) said, 'Whoever takes a bath on Friday, purifies himself as much as he can, then uses his (hair) oil or perfumes himself with the scent of his house, then proceeds (for the Jumua [Friday] prayer) and does not separate two persons sitting together (in the mosque), then prays as much as (Allah has) written for him and then remains silent while the Imam is delivering the Khutba [Muslim sermon], his sins in-between the present and the last Friday would be forgiven.' (MSA-USC Hadith Database, *Ṣaḥīḥ al-Bukhārī*, Vol. 2, Book 13, No. 8).

Funerary practices further underline the importance of perfumes in Islamic life. According to Islamic precepts, a corpse must be buried within hours after a person's death. To prepare its interment, the corpse is washed thoroughly several times. Generally in Islamic cultures, various essences are added in water for the last cycle of washing before the corpse is embalmed with *ḥanūṭ* ('embalming'), representing either dry camphor or a scented unguent that consists exclusively of camphor or a mixture with *dharīra* (a powdery mixture of several aromatics), musk, sandalwood, and possibly other aromatics. It may be applied directly to the body, between the burial clothes, or also on the bier. The funerary practices specifically of 'Adan are distinguished by the special role of agarwood. Its oil is used to perfume the corpse,

along with rose petals, solid musk, and the oil of musk. The final step involves the corpse wrapped in a shroud that has been smoked with the agarwood incense (Feerer et al., 2005).

The Prophet Muhammad also held the tradition of fumigation with agarwood which continues in the Muslim world up to this day. Nafi' reported that when Ibn Umar wanted fumigation he got it from aloeswood without mixing anything with it, or he put camphor along with aloeswood and then said: This is how Allah's Messenger fumigated. Narrated Abu Huraira: the Holy Prophet made known that agarwood is a distinct item of Paradise in his saying, "The first group of people who will enter Paradise, will be glittering like the full moon and those who will follow them, will glitter like the most brilliant star in the sky. They will not urinate, relieve nature, spit, or have any nasal secretions. Their combs will be of gold, and their sweat will smell like musk. The aloes-wood will be used in their centers. Their wives will be houris. All of them will look alike and will resemble their father Adam (in statute), sixty cubits tall." The Song of Songs describes King Solomon (peace be upon him) as "coming up from the desert like a column of smoke, perfumed with myrrh and incense" and there are numerous references throughout this book of the Old Testament to "every kind of incense tree" which popular belief denotes to Oud. The bible mentioned several citations of Oud, including a text in which Jesus (peace be upon him) is said to have been perfumed with aloes (Oud).

There were obviously more factors that allowed agarwood to become such an important perfumery good in South Yemeni culture. Towards the end of the first millennium CE, the new knowledge of the foreign product fell on a fruitful basis given by Islam. Agreeable scents have been highly regarded in Islam from the very beginning; their esteem has been established by the Qur'ān. Numerous verses (including commentaries) describe the Paradise with its fine air and greenery. It is hardly possible to draw a distinction between the odoriferous environment and spiritual energy. One example is provided in the following verses of sūra 56, that describe the Paradisiacal garden. The quoted *rayhān* may equally refer to the "ease" as well as to a variety of "fragrant herbs" – the fragrant plants that were known in the Arabian world already at the time of the Prophet (MSA-USC Hadith Database, *Ṣaḥīḥ al-Bukhārī*, Vol. 3, Book 47, No. 756).

## 6. Conclusion

The value of fragrances in Islam can never be overstated. It is part of the religious culture and is very much embedded in the spiritual aspect of a Muslim lifestyle as demonstrated by the various hadith that touch on this issue. Thus, the gaharu with its unique properties has a special place in the life of a Muslim. Other than its obvious importance as an ingredient in producing perfumery, its wide use in Islamic traditions has been acknowledged for centuries. In the realisation that the tree which is the source of this ingredient is currently endangered, it is the duty of relevant institutions especially in Muslim countries to take active steps to preserve this important resource.

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